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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/855,022	05/15/2001	Kaj Henricson	30-475	8000

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EXAMINER

HUG, ERIC J

ART UNIT

PAPER NUMBER

1731

DATE MAILED: 05/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/855,022

Applicant(s)

HENRICSON ET AL.

Examiner

Eric Hug

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 and 27-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 27-31 is/are rejected.
- 7) ☒ Claim(s) 11-16 and 32-34 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 07 March 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claims 1-16 and 27-34 are pending in the application.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-4 and 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Arhippainen et al (US 4,042,452). Arhippainen discloses a process for washing pulp comprising the addition of acid to washing solutions in a countercurrent washing sequence. The acid is provided to reduce the detrimental effects of organic substances which typically remain with the pulp after washing. The acid lowers the pH and reduces the color of the pulp liquor, with the effect of increasing pulp brightness. This effect can be increased by using an oxidizing acid (column 1, lines 58-62) or by combining an oxidizing agent with the acid (column 2, lines 4-8).

Pulp is fed into a multi-stage washer following alkali digestion where it is treated in successive stages with wash water obtained immediately downstream (from a subsequent stage). Acid is added to at least one filtrate obtained from any of the downstream washing stages. The treated filtrate is then used as wash water in an upstream (preceding) washing stage. With respect to the claims:

Claim 1: The reference discloses an example having four washing stages. The washing is performed prior to oxygen gas treatment. Therefore, there are at least a first washing stage and a second washing stage before the oxygen stage. In Example 1, water between stages 3 and 4 is treated, although water between any two stages can be treated. Therefore, water from a second washing stage is treated and recycled to a first washing stage.

Claim 2: In the prior art configuration, wash water obtained from the wash stage after the oxygen stage is used in the washer immediately before the oxygen stage (designated as the second washing stage). In Figure 3 of Arhippainen, water going into stage N+1 can be obtained from a treatment stage later in the production process (column 3, lines 12-18). Thus, water from the wash following the oxygen stage can be used as wash water for stage N+1, which is the designated second washing stage.

Claims 3, 8, 9: Washers are in series. Diffuser washers are disclosed in Example 1. In the countercurrent washing scheme described above, filtrate is returned to a previous washing device as wash water.

Claim 4: Filtrate only needs to be partially treated according to what is used as wash water (column 3, lines 18-20).

Claim 10: Chemical mixing of wash water and treating agent takes place between wash stages, effecting a certain retention time before the treated wash water is used as washing liquid.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 5-7 and 27-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arhippainen et al. Arhippainen (described above and applied to claim 1) discloses a process for acid-treatment of pulp wash water, whereby the acid may be an oxidizing acid or contain an oxidizing agent.

With regards to claim 5, no disclosure of oxygen or hydrogen peroxide is given by Arhippainen for use as the oxidizing agent. However, at the time of the invention it would have been obvious to one skilled in the art that oxygen or hydrogen peroxide are suitable oxidizing agents, as they are well-known oxidizing agents and commonly used in subsequent pulp bleaching operations. See *In re Leshin*, 125 USPQ 416 (CCPA 1960), whereby the selection of a known material based on its suitability for the intended use is within the skill of a routineer in the art.

With regards to drum washers of claims 6 and 7, and to the brown stock washers of claim 27, multi-stage drum filters in series typically constitute the washing sequence before an oxygen stage. This washing stage is also known as the brown stock washing stage. This is disclosed by Applicant as prior art and also by the teachings of Smook that were provided in the previous office action.

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With further regards to claim 27 and with regards to claims 28-31, Arhippainen discloses a digester, a series of washing devices with countercurrent wash water, an oxygen stage, and means for treating washing filtrate with an oxidizing agent. As described in the above paragraph, the washing devices would be recognized by one skilled in the art as being brown stock washing devices. It would also be known to one skilled in the art that a washing stage follows the oxygen stage, as disclosed by Applicant as prior art. The point of addition of oxidizing agent is in the flow pipe between at least two washers and before the oxygen stage. This point of addition effectively provides a certain retention time for the oxidizing agent and filtrate before using as wash water. It would also have been obvious to one skilled in the art to use pumps or mixers as necessary to mix the acid/oxidizing agent with the wash filtrate to insure thorough mixing and maximize the oxidation of organic species present in the pulp, as these devices are conventional equipment for combining process streams.

Allowable Subject Matter

Claims 11-16 and 32-34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Claims 11-13 are allowable, because the prior art does not disclose or suggest a method of treating chemical pulp with an oxidizing chemical as given by claim 1 and further comprising a means for providing gas separation after treatment with a gaseous oxidizing chemical.

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Claims 14-16 are allowable, because the prior art does not disclose or suggest a method of treating chemical pulp as given by claim 1 whereby the pulp is led to an oxygen stage and has the claimed pH, pressure, temperature, and treatment time.

Claims 32-33 are allowable, because the prior art does not disclose or suggest an apparatus for treating chemical pulp as given by claim 27 and further comprising a means for gas separation after treatment with a gaseous oxidizing chemical.

Claim 34 is allowable, because the prior art does not disclose or suggest an apparatus for treating chemical pulp as given by claim 27 and further comprising at least one pressurized reaction vessel in the filtrate system preceding the oxygen stage.

Response to Arguments

Applicant's arguments and amendments to the claims have overcome all rejections set forth in the previous office action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

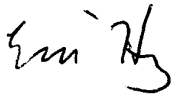
Bokstrom et al (US 5,429,717) discloses carbon dioxide treatment to pulp during the washing sequence to improve washing efficiency.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Hug whose telephone number is 703 308-1980. The examiner can normally be reached on Monday through Friday, 9:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 703 308-1164. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872-9310 for regular communications and 703 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-0651.



jeh
May 6, 2003


STEVEN P. GRIFFIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700